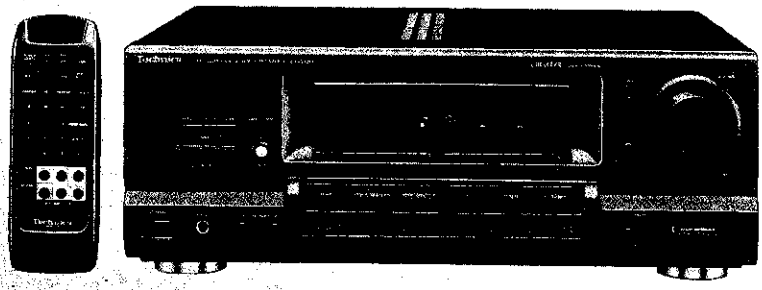
Technics®

AV control stereo receiver

SA-GX690
SA-GX490/SA-GX390

Operating Instructions



The photographs show SA-GX690 for United Kingdom.

Note:
The "EB" indication shown on the packing case indicates United Kingdom.

Before connecting, operating or adjusting this product, please read these instructions completely.

EB GN

Dear Customer

Thank you for purchasing this Technics product.
For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to models SA-GX690, SA-GX490 and SA-GX390.
These operating instructions, however, are intended primarily for model SA-GX690.

Caution for AC mains lead

(For United Kingdom)

("EB" area code model only)
For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

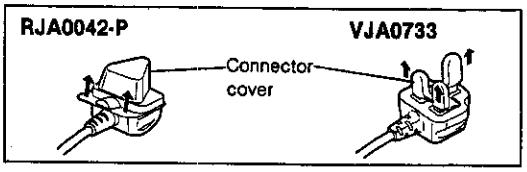
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

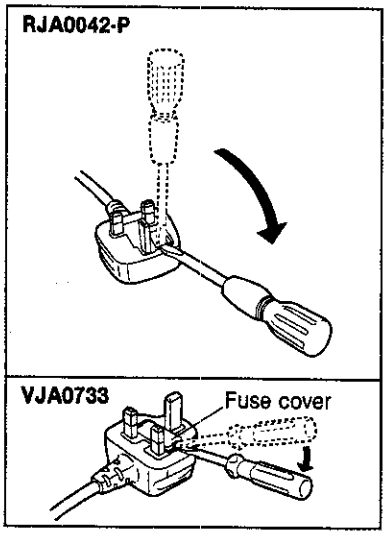
Before use

Remove the connector cover as follows.

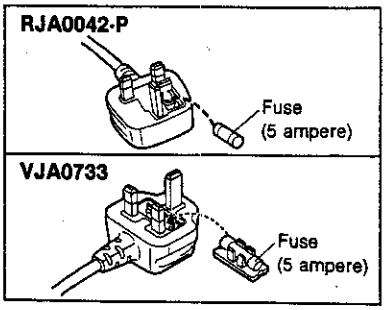


How to replace the fuse

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



(For Australia and N.Z.)

THIS TUNER/RECEIVER IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY TUNERS AND RECEIVERS CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO TUNER/RECEIVER.

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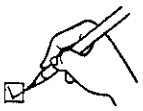
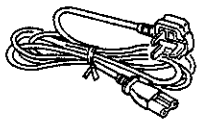
Accessories



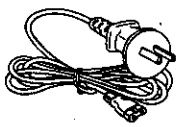
Please check and identify the supplied accessories

☐ AC power supply cord ..... 1 pc.

(For United Kingdom) (VJA0733 or RJA0042-P)

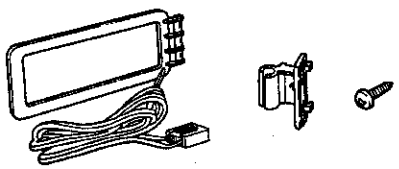


(For Australia and N.Z.) (RJA0036-K)



☐ FM indoor antenna (RSA0007) .. 1 pc.

☐ AM loop antenna set (RSA0010)
- AM loop antenna ..... 1 pc.
- AM antenna holder ..... 1 pc.
- Screw ..... 1 pc.



☐ Remote control transmitter ..... 1 pc.

For SA-GX690/ SA-GX490/ SA-GX390

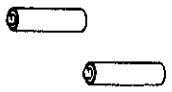
(RAK-SA179XH)

For SA-GX690 (For Australia and N.Z.)

(RAK-SA603MH)

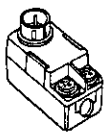
For details on remote control transmitter operation, refer to "How to use the remote control transmitter" in the separate booklet.

☐ Batteries (UM-4, "AAA", R03) ..... 2 pcs.



☐ Attachment plug (SJP9009) ..... 1 pc.
(United Kingdom only)

☐ Antenna plug (RFE0014) ..... 1 pc.
(Australia and N.Z. only)



Suggestions for safety

Placement

Avoid placing the unit in areas of:
- direct sunlight
- high temperature
- high humidity
- excessive vibration
- uneven surfaces (Place the unit on a flat level surface.)

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

Ventilation

- Place the unit in a well ventilated position at least 10 cms away from wall surfaces etc.
- Ensure that curtains and similar materials do not obstruct the ventilation holes.

Stacking

Never place heavy items on top of the unit or the power cord.

Voltage

- It is very dangerous to use an AC power source of high voltage such as for an air conditioner.
  A fire might be caused by such a connection.
- A DC power source can not be used.
  Be sure to check the power source carefully, especially on a ship or other place where DC is used.

Power cord protection

- Avoid cuts, scratches or poor connection of the AC mains cord, as this may result in fire or electric shock hazard.
  Excessive bending, pulling or slicing of the cord should also be avoided.
- Do not pull on the cord when you are disconnecting the power, as this could cause an electric shock. Grasp the plug firmly when you disconnect the power supply.
- Never touch the plug with wet hands or a serious electric shock could result.

Foreign materials

- Ensure that no foreign objects, such as needles, coins, screwdrivers etc., accidentally fall into the unit or through the ventilation holes.
  Otherwise, a serious electric shock or malfunction could occur.
- Be extremely careful about spilling water or liquid on/into the unit, as a fire or electric shock could occur.
  (Disconnect the power plug and contact your dealer immediately if this occurs.)
- Avoid spraying insecticides onto the unit as they contain flammable gases which can be ignited.
- In secticides, alcohol, paint thinner and similar chemicals should never be used to clean the unit as they can cause flaking or cloudiness to the cabinet finish.

Maintenance

Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution.

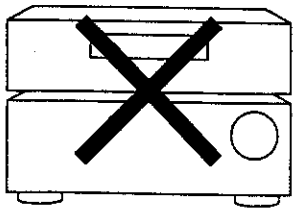
Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

Service

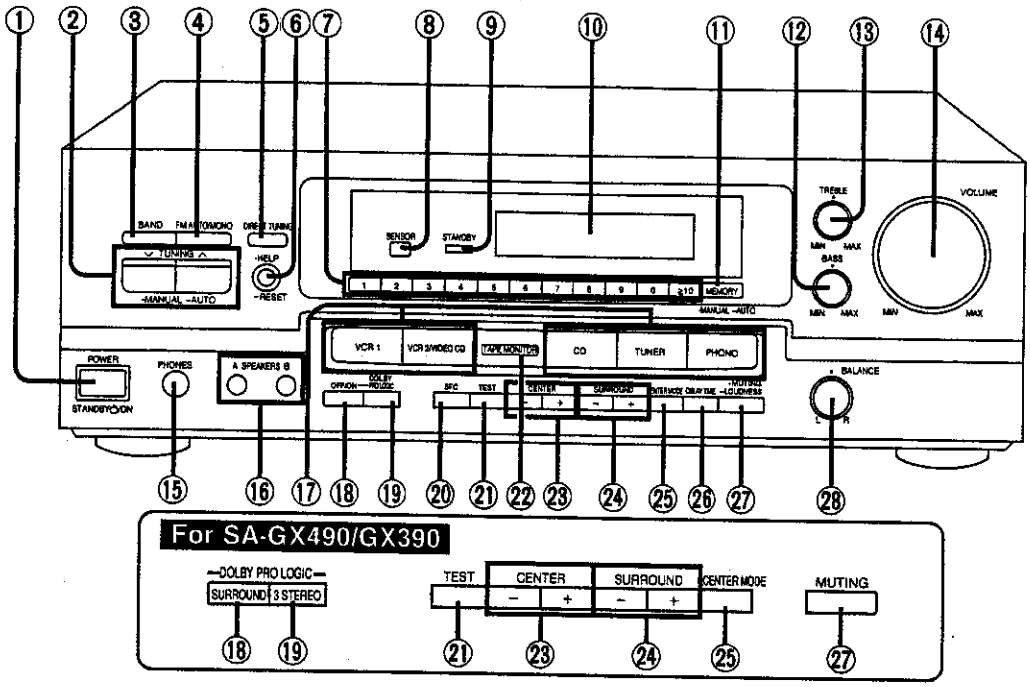
- Never attempt to repair, disassemble or reconstruct the unit if there seems to be a problem.
  A serious electric shock could result if you ignore this precautionary measure.
- If a problem occurs during operation (the sound is interrupted, indicators fail to illuminate, smoke is detected, etc) contact your dealer or Authorized Service Center immediately.
- Disconnect the power supply if the unit will not be used for a long time. Otherwise the operation life could be shortened.

CAUTION

Do not place a tape deck or CD player on top of this unit. Heat radiated from the top of this unit may cause damage to the tape or CD software.



Front panel controls



No.	Name	Ref. page
①	**Power "STANDBY ⏻ /ON" switch (POWER, STANDBY ⏻ /ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.	*12*
②	**Tuning control (TUNING)**	*14*
③	**Band select button (BAND)**	*14*
④	**FM mode select button (FM AUTO/MONO)**	*14*
⑤	**Direct tuning button (DIRECT TUNING)**	*14*
⑥	**Help/reset button (-HELP −RESET)**	*13,22*
⑦	**Numeric buttons (1−0, ≥10)**	*14,16*
⑧	**Remote control signal receptor**	—
⑨	**"STANDBY" indicator** When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.	—
⑩	**Display**	—
⑪	**Memory button (MEMORY)**	*15,16*
⑫	**Bass control (BASS)**	*13*
⑬	**Treble control (TREBLE)**	*13*
⑭	**Volume control (VOLUME)**	*12*
⑮	**Headphone jack (PHONES)**	*13*
⑯	For SA-GX690/GX490 **Speaker select buttons (SPEAKERS)** For SA-GX390 **Speaker button (SPEAKERS)**	*12* *12*
⑰	**Input select buttons**	*12,19,21,22*

No.	Name	Ref. page
⑱	For SA-GX690 **DOLBY PRO LOGIC/SFC OFF ON button (OFF/ON)** For SA-GX490/GX390 **Surround button (SURROUND)**	*19,20* *17,18,19*
⑲	For SA-GX690 **DOLBY PRO LOGIC mode select button (PRO LOGIC)** For SA-GX490/GX390 **3 stereo button (3 STEREO)**	*17,18,19* *17,18,19*
⑳	**SFC mode select button (SFC)** SA-GX690 only	*20*
㉑	**Test signal button (TEST)**	*18*
㉒	**Tape monitor button (TAPE MONITOR)**	*12,21*
㉓	**Center level adjust button (CENTER)**	*18,20*
㉔	**Surround level adjust button (SURROUND)**	*18,20*
㉕	**Center mode select button (CENTER MODE)**	*17*
㉖	**Delay time adjust button (DELAY TIME)** SA-GX690 only	*19*
㉗	For SA-GX690 **Muting/loudness button (-MUTING −LOUDNESS)** For SA-GX490/GX390 **Muting button (MUTING)**	*13* *13*
㉘	**Balance control (BALANCE)**	*13*

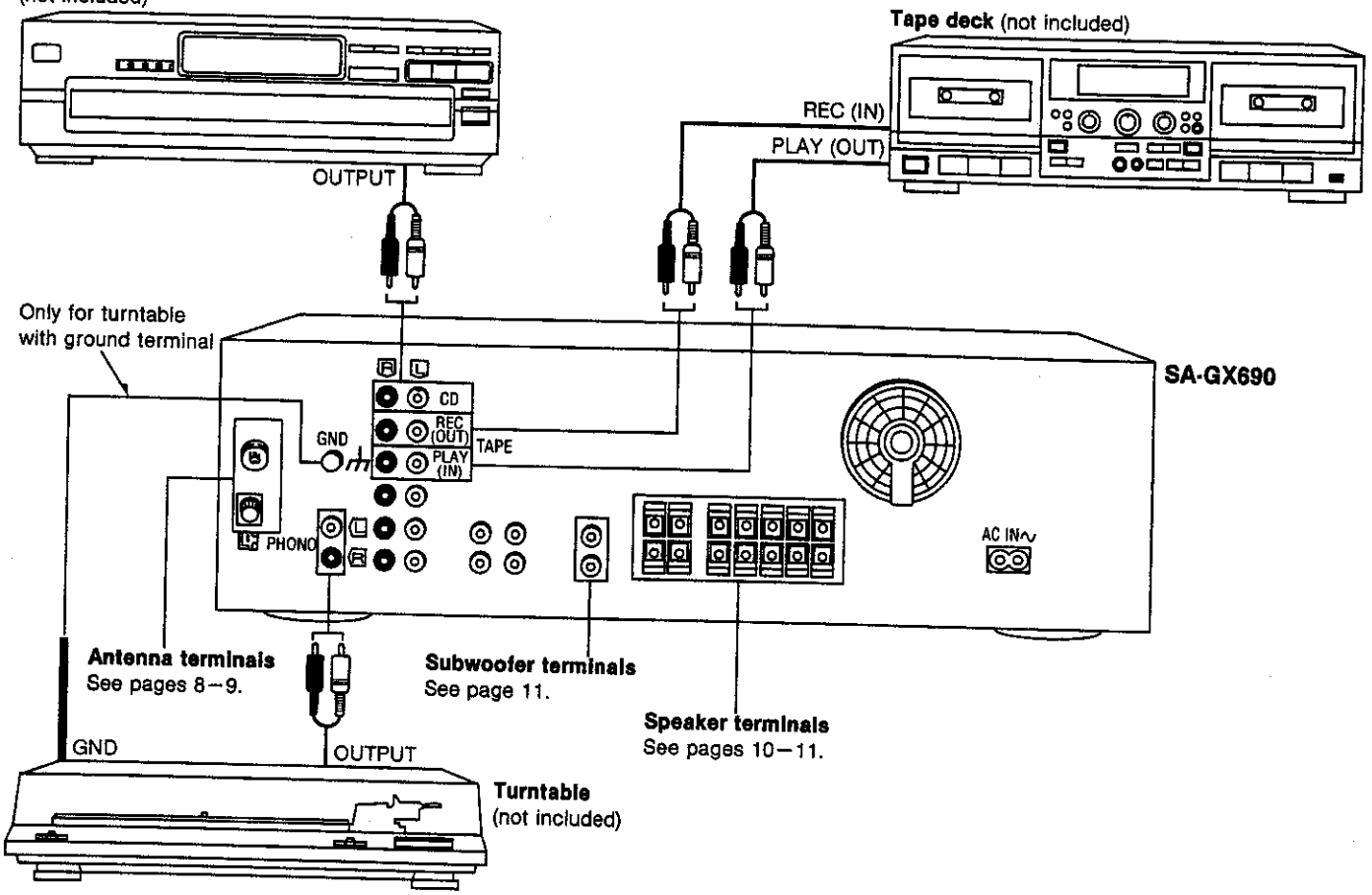
Connecting audio equipment

Stereo connection cable (not included)
White (L)
Red (R)

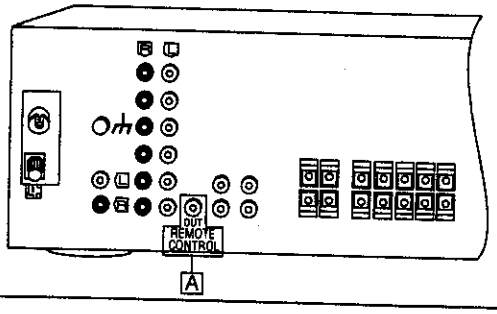
Note
Do not place books, etc., on top of this unit or block the heat radiation vents in any way.

CD changer (or CD player)
(not included)

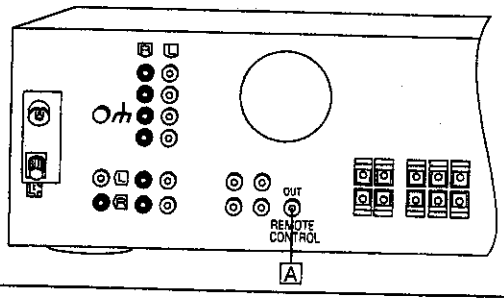
Tape deck (not included)



For SA-GX490

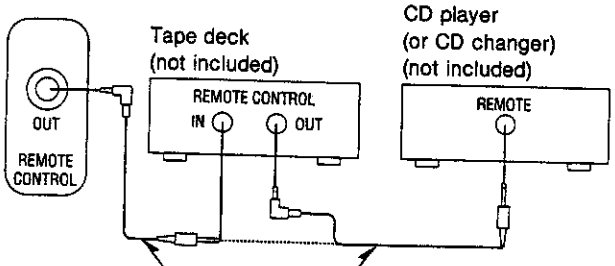


For SA-GX390



A For SA-GX490/GX390

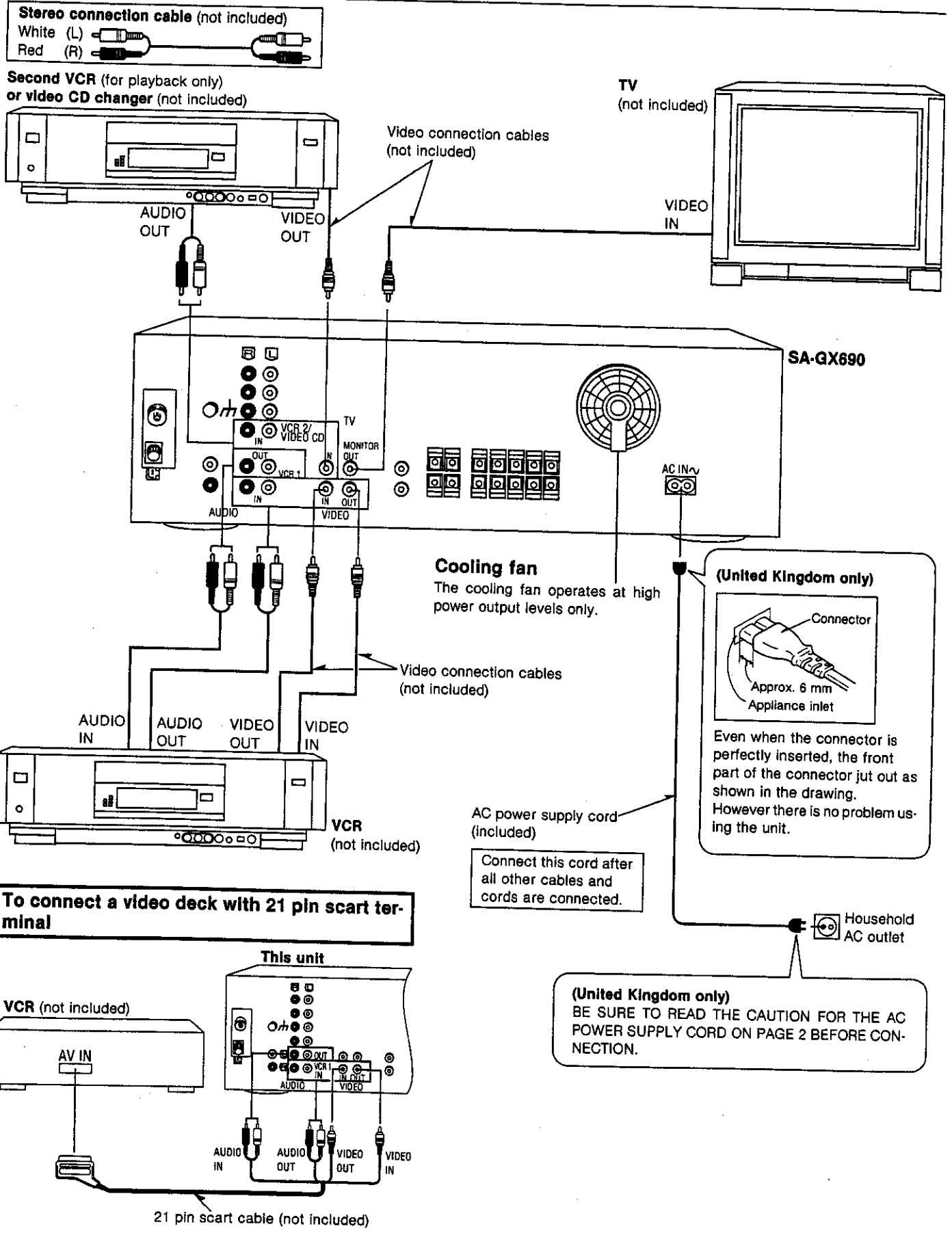
"REMOTE CONTROL OUT" terminal



Connect the connection cable for remote control to a Technics tape deck and/or CD changer (or CD player) which has the appropriate remote control terminal as shown above.
If a tape deck is not being used, the CD changer (or CD player) can be connected directly (dotted line).

Note
For a tape deck and/or CD changer (or CD player) with a remote control sensor, this connection is not necessary.

Connecting video equipment

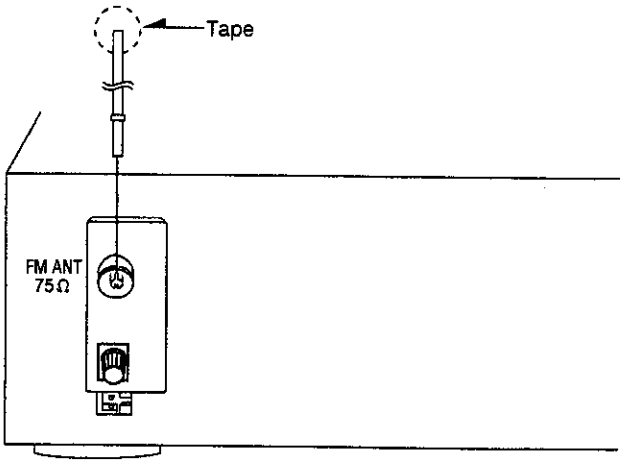


Antenna connections

FM indoor antenna *(included)*

This antenna is normally sufficient for reception of FM broadcasts.

FM indoor antenna
(included)



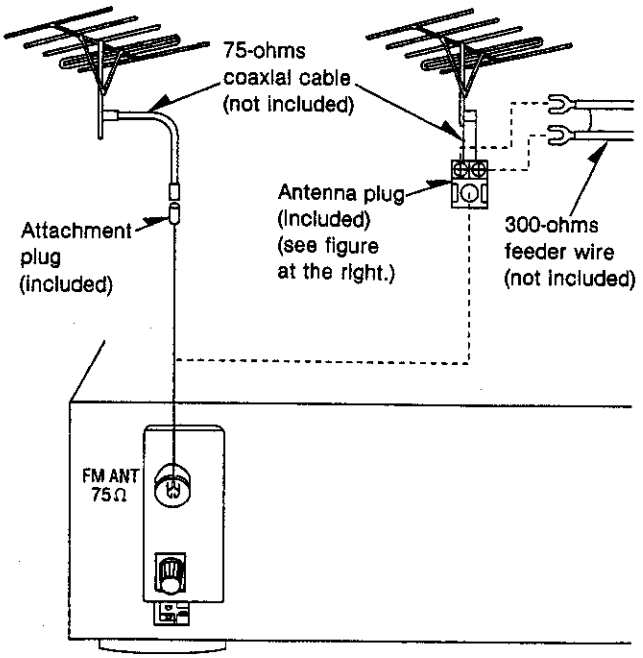
FM outdoor antenna *(not included)*

The outdoor antenna should be used when using the main unit in mountainous areas or in spaces enclosed by reinforced concrete where the FM indoor antenna (included) does not provide satisfactory reception.

Note
An outdoor antenna should be installed by a qualified technician only.

(For United Kingdom)
FM outdoor antenna
(not included)

(For Australia and N.Z.)
FM outdoor antenna
(not included)



(For Australia and N.Z.)

■ How to use the antenna plug (included)

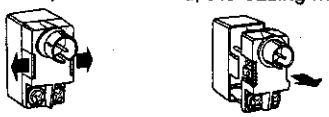
Two types of wire are most commonly used for connection from the antenna: 300-ohms parallel feeder wire or 75-ohms coaxial cable. For best resistance to outside interference, the use of 75-ohms coaxial cable is suggested.

To connect a 75-ohms coaxial cable

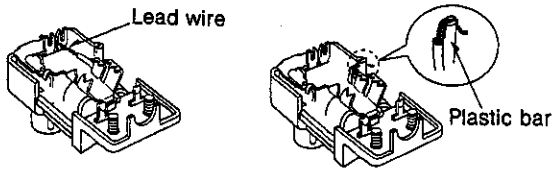
① Remove a piece of the outer vinyl insulator.

② Remove the cover while pulling the tabs.

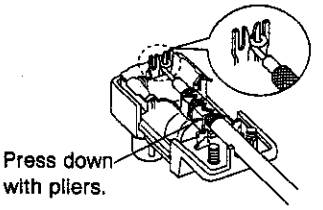
Note
If the tabs are pulled too hard, the casing may be damaged.



③ Remove the lead wire and clamp it with the plastic bar.



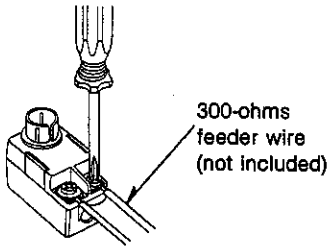
④ Install the coaxial cable.



Clamp the cable conductor, and wind it on so that it doesn't contact anything else.

⑤ Attach the cover.

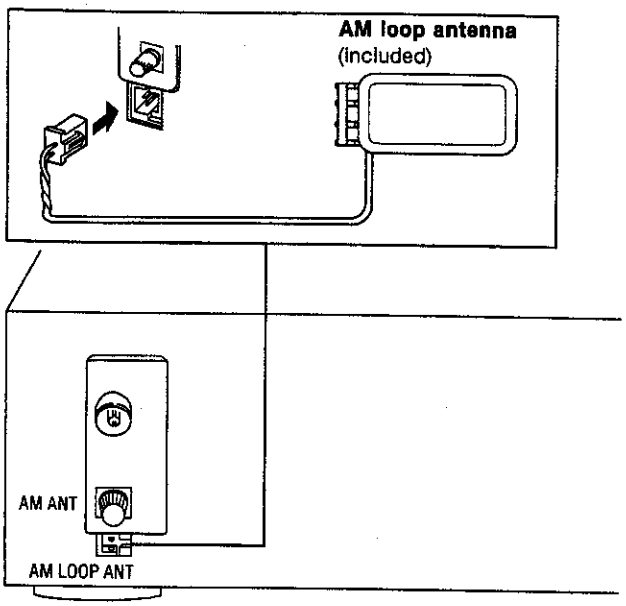
To connect a 300-ohms feeder wire



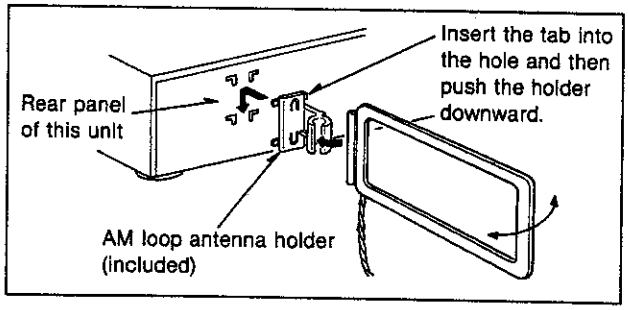
Loosen the screw to connect the feeder wire and tighten it to secure the connection.

AM loop antenna *(included)*

This antenna is normally sufficient for reception of MW/LW (For Australia and N.Z.: AM) broadcasts.

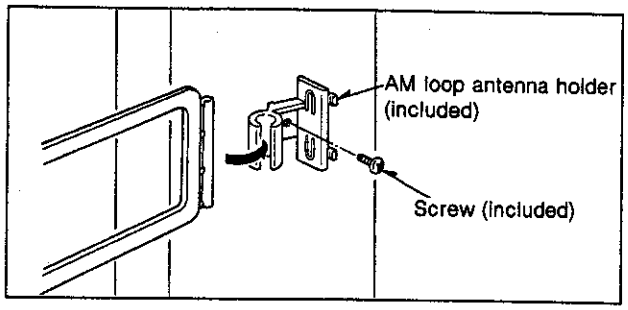


Install the AM loop antenna holder (included) at the rear panel of this unit and then attach the AM loop antenna to the AM loop antenna holder (facing in the direction of best reception).



When mounting the antenna to a column, a wall or rack

Mount it vertically.

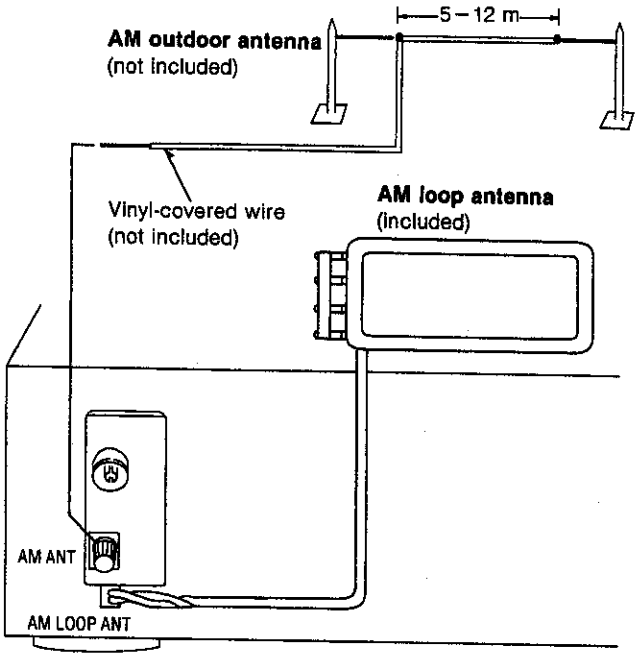


Pay attention to the following points when mounting the antenna.

- Do not mount it horizontally (Doing so will impair reception).
- Do not mount it close to power cords, speaker wires or metal surfaces (Doing so will result in noise).
- Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

AM outdoor antenna *(not included)*

The outdoor antenna should be used when using the main unit in mountainous areas or in spaces enclosed by reinforced concrete where the AM loop antenna (included) does not provide satisfactory reception.



Stretch 5 – 12 m of vinyl-covered wire horizontally across a window frame or other convenient location, keeping it as high as possible from the ground.

When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

Note

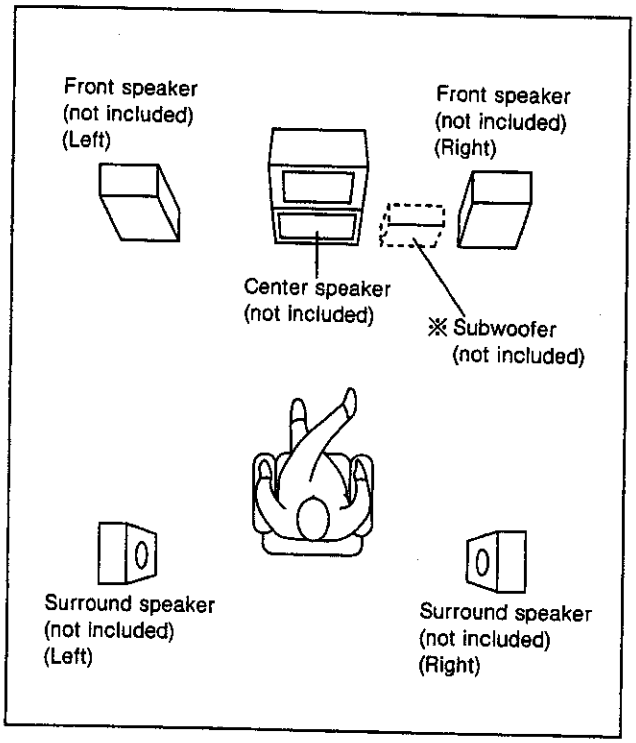
Be sure to connect the AM loop antenna even when an outdoor antenna is used.

Speaker connections

Placement of speakers

As well as enjoying normal stereo reproduction with the left and right front speakers, a center speaker and surround speakers can also be connected to the main unit in order to enjoy the sound performance of Dolby Pro Logic Systems and the SFC function.

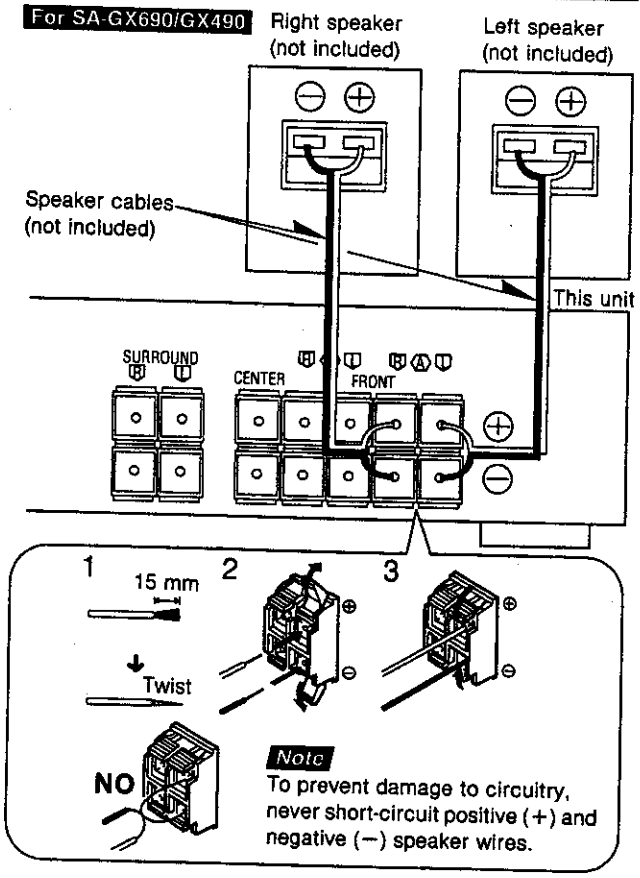
The illustration below shows where to place the speakers so as to best enjoy sound with Dolby Pro Logic systems and the SFC function.
We recommend that surround speakers be placed on the side of or slightly behind the listener, and about one meter higher than ear level.
However the position should be adjusted to your personal preference, because the effect varies to some degree depending upon the type of music and the music source.

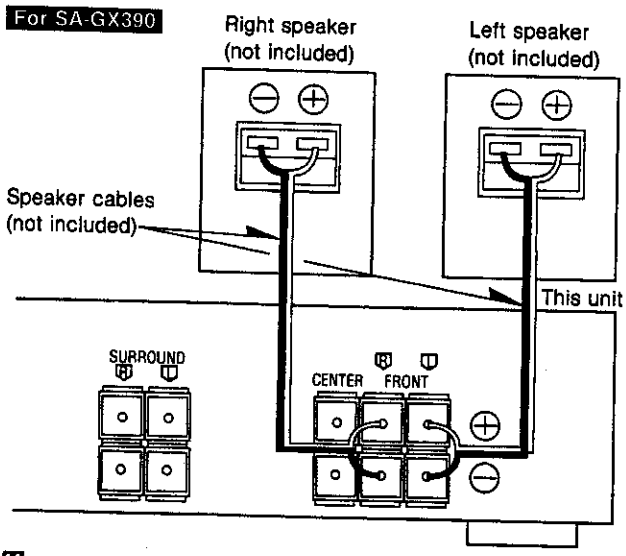


※ The subwoofer can be placed in any position.

Connection of front speakers

To connect to the "A" terminals





To connect to the "B" terminals

SA-GX690/GX490 only

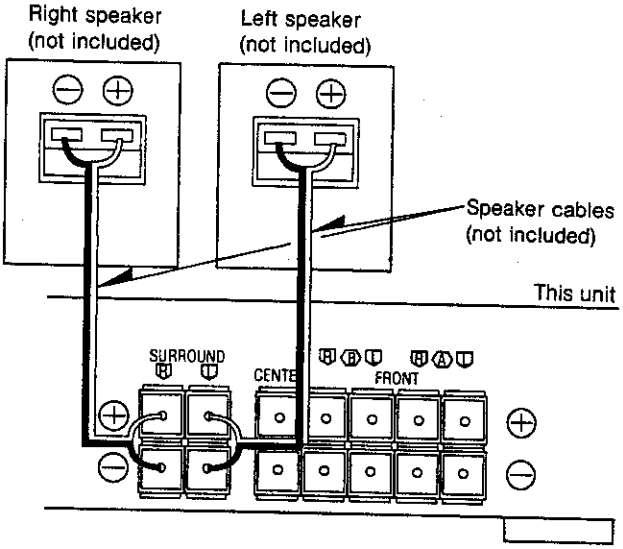
For connection to a second pair of speakers.

■ Speaker impedance

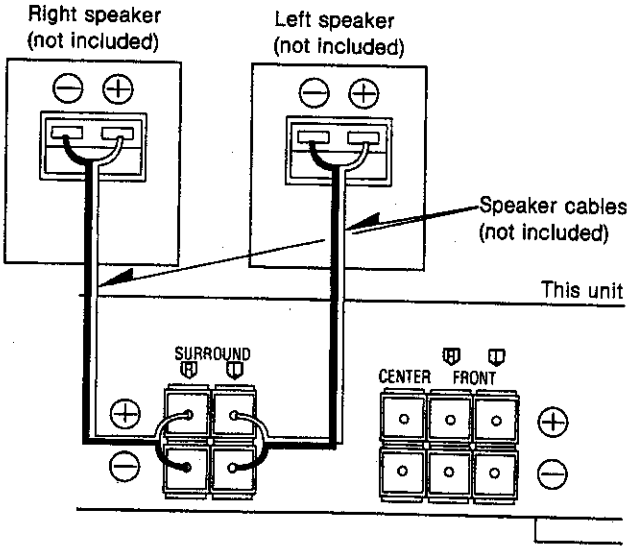
For SA-GX690/GX490	
A or B (For United Kingdom)	4 – 16 Ω
(For Australia and N.Z.)	8 – 16 Ω
A and B	8 – 16 Ω
For SA-GX390	
(For United Kingdom)	4 – 16 Ω
(For Australia and N.Z.)	8 – 16 Ω

Connection of surround speakers

For SA-GX690/GX490



For SA-GX390



Note

1. Before sound can be heard, both surround speakers must be connected.
2. Do not connect the surround speakers to the front speaker terminals. The surround speakers may be damaged if connected to the front terminals due to the output power difference between the front and surround terminals.

■ Speaker Impedance

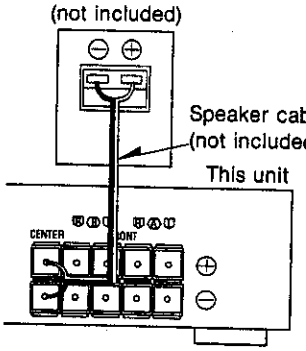
The impedance of any speaker used with this unit must be 4 – 16 Ω.

Connection of center speaker

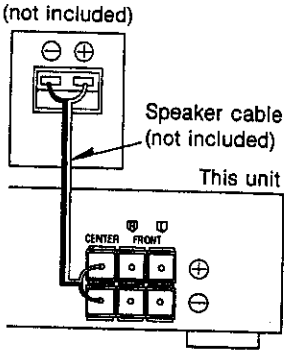
Note

Before sound can be heard, the SURROUND mode or 3 STEREO mode (of the Dolby Pro Logic system) must be on.

For SA-GX690/GX490



For SA-GX390



■ Speaker impedance

The impedance of any speaker used with this unit must be 8 – 16 Ω.

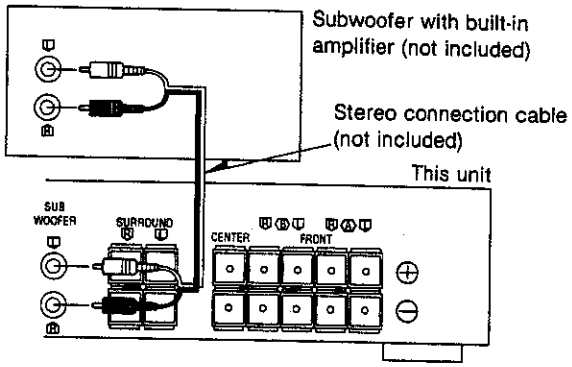
Connection of subwoofer

SA-GX690 only

The subwoofer is connected when bass sounds are inadequately reproduced because front speakers are too small.
When connected, the subwoofer can be placed in any position.

Note

This unit has no amplifier section designed especially for the subwoofer, so it is necessary to purchase a subwoofer with a built in amplifier or buy the two separately.



Connecting a subwoofer which does not have a built-in amplifier

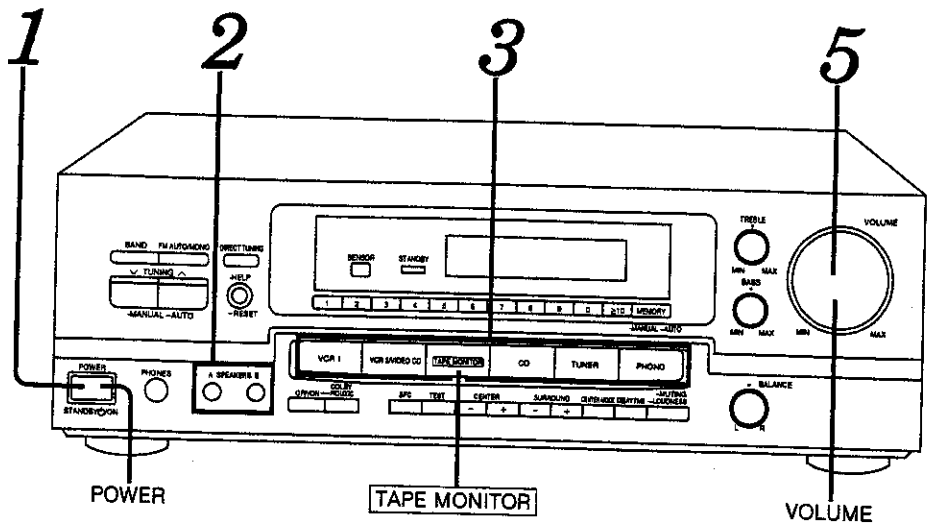
Connect an optional amplifier to the "SUBWOOFER" terminals of this unit and then connect a subwoofer to the speaker terminals of the amplifier.

For your reference:

The level of sound output from the subwoofer will always be at 80 Hz or less, regardless of the settings of the speaker select buttons on this unit, thus the intensity of the low frequency range will be maintained.

When adjusting the volume of the subwoofer

After setting the volume control on the subwoofer or on the amplifier which is connected to the subwoofer, make any further adjustments with the volume control on this unit.



- Before operation, set VOLUME to the "MIN" position.
- When viewing a video, turn on the power supply for the TV and set the TV to video mode.

1 Press POWER.

2

For SA-GX690/GX490

Press A and/or B to select the speaker system(s) to be used.

A and B refer to the speaker terminals at the rear of the unit.

Lights up

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

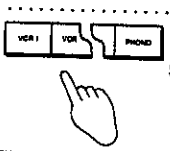
For SA-GX390

Press SPEAKERS and check the "ON" indication lights up.

Lights up

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

3



Press to select the desired source.

Source	Button
Video tapes (VCR 1)	VCR 1
Video tapes (VCR 2)	VCR 2/VIDEO CD
Video CD	VCR 2/VIDEO CD
Tape	TAPE MONITOR
	The tape monitor indicator will light up.
Compact discs	CD
Radio broadcasts	TUNER
Phono discs	PHONO

The selected video source is output from the "TV (MONITOR OUT)" terminal on the back of the unit.

Video source

4 Start the desired source.

(Refer to the appropriate operating instructions for details.)

5 Turn VOLUME to adjust the volume level.

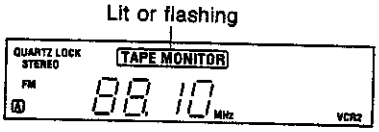
After listening is finished

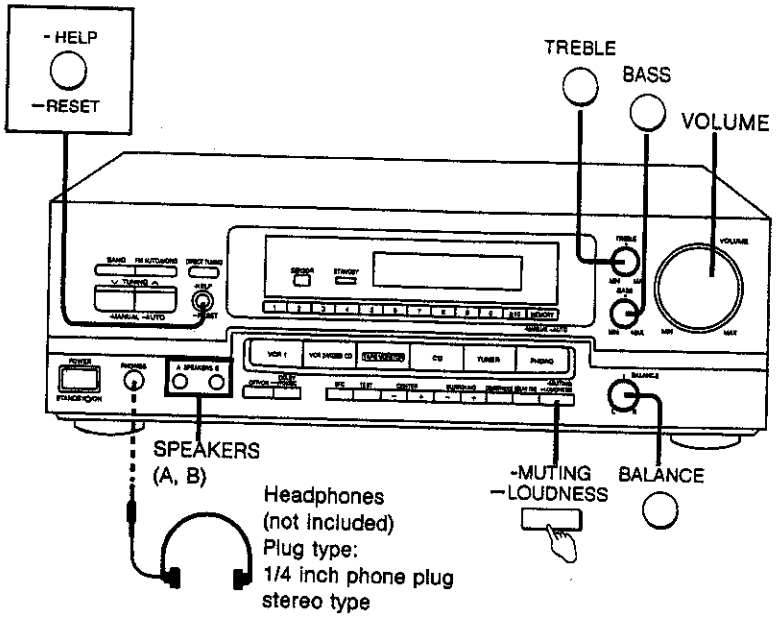
Be sure to reduce the volume level, and switch the power to the standby condition by pressing POWER.

When the tape monitor indicator is lit or flashing

This indicates that the tape monitor function of this unit is ON. To listen to sources other than a tape, be sure to press TAPE MONITOR and check the indicator goes out.

Lit or flashing





If sound output stops during use or if you are unsure what to do

- HELP
–RE

Press -HELP. (Touch only.)
The help function can be used to display operations you are expected to do.
For details, see page 22.

To adjust the tone quality

TREBLE

Turn TREBLE to adjust the high frequency sound.

BASS

Turn BASS to adjust the low frequency sound.

To mute the sound level

For SA-GX490/GX390

MUTING

Press MUTING.

For SA-GX690

-MUTING
–LOUDNESS

Press -MUTING. (Touch only.)

The message "MUTING ON NOW" runs repeatedly from right to left across the display as long as the muting function is on.

Press once again to return to the previous volume level.

To adjust the sound balance

BALANCE

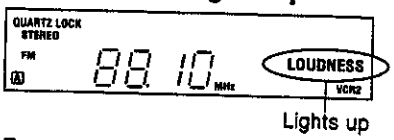
Turn BALANCE to adjust the left/right sound balance.

To emphasize low frequency sound

SA-GX690 only

-MUTING
–LOUDNESS

Press –LOUDNESS until the "LOUDNESS" lights up.



Lights up

To return to the previous condition, hold down the button until the "LOUDNESS" indication turns off.

To listen through headphones

Use VOLUME to reduce the volume level, and connect the headphones.

For SA-GX690/GX490

If you do not want sound from the speakers, press SPEAKERS (A) and (B) and check the speaker select indicators go out.

For SA-GX390

If you do not want sound from the speakers, press SPEAKERS and check the "ON" indication goes out.

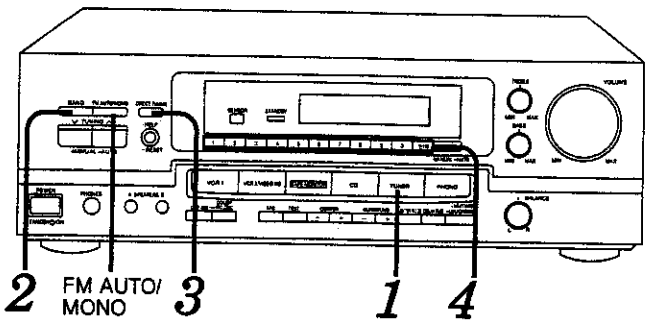
Note

Avoid listening for prolonged periods of time to prevent hearing damage.

Listening to radio broadcasts

Direct access tuning

Specify the frequency using the numeric buttons to directly tune to the desired broadcast station.

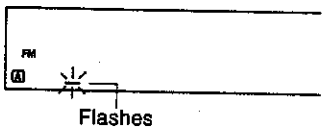


1 TUNER **Press TUNER.**

2 BAND **Press BAND to select "FM", "MW" or "LW".**
(For Australia and N.Z.: FM or AM)

Lights up

3 DIRECT TUNING **Press DIRECT TUNING.**



Flashes

While cursor display is flashing (approx. 10 seconds)

4 1 2 3 0 ≥10 **Press the appropriate numeric buttons to enter the frequency.**

If the desired FM frequency is 107.90 MHz

1 → 0 → 7 → 9 → 0

Lights up when tuned

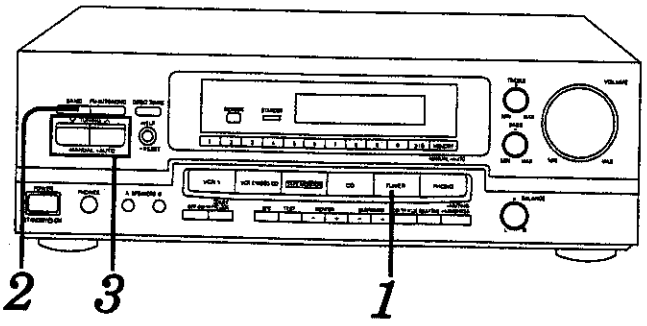
If the frequency has been input correctly, the displayed frequency will blink once.

Note

1. If no button is pressed while the cursor display is flashing, the display will return to the frequency which is currently being received. To re-specify the frequency, repeat the procedure from step 3.
2. If the frequency has not been input correctly, "ERROR" indication will be displayed. In this case, re-enter the frequency.

Sequential tuning

If the frequency is not known, use the tuning buttons to search for it.



1 TUNER **Press TUNER.**

2 BAND **Press BAND to select "FM", "MW" or "LW".**
(For Australia and N.Z.: FM or AM)

Lights up

3 ∨ TUNING ∧ **Press ∨ or ∧ to tune to the desired broadcast.**

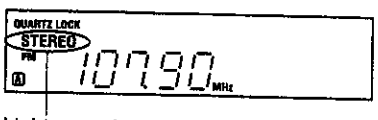
If either button is held down for an instant until the frequency begins to scroll, the broadcast stations can be tuned in automatically when a broadcast station is found.

Note

Tuning may stop automatically if any jamming is encountered.

When the FM stereo broadcast is received

This unit will automatically switch to FM stereo reception and the "STEREO" indication will light up.



Lights up when a stereo broadcast is tuned in

If noise is excessive in the FM stereo mode

Press FM AUTO/MONO. (The FM stereo indicator will switch off.) The broadcast will be monaural, but noise will be reduced. If the button is pressed once more, the stereo mode will be resumed.

To change the MW frequency step

Press and hold BAND for about 3 seconds.
(The frequency step changes to 10 kHz per step.)
To return to the previous step, press and hold BAND for about 3 seconds again.

Preset tuning

By presetting the desired broadcast stations into the memory channels of this unit, broadcast stations can be selected simply by pressing numeric button(s). (Refer to page 16 for tuning.)

Before presetting

How many broadcast stations can be preset?

For United Kingdom

A total of 30 FM, MW and LW stations can be preset.

For Australia and N.Z.

A total of 30 FM and AM stations can be preset.

How is presetting done?

The two following methods are available.

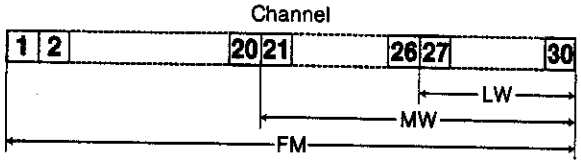
- **Automatic memory presetting**

  Automatic memory presetting allows this unit to automatically search for broadcast stations and then preset them into memory.

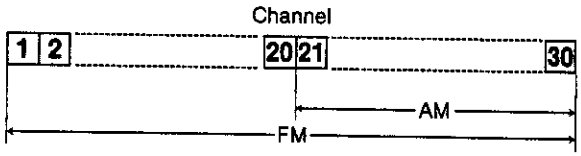
  With this function, searching proceeds from the frequency currently being displayed and continues through higher frequency, and broadcast stations are preset in the order in which they are located.

  With this method, the channels that can be preset into the memory are set as follows for different bands.

For United Kingdom



For Australia and N.Z.



For example, after presetting the FM band, if the MW (or AM) band is preset, the previous presettings in the sections in the above illustration which overlap will be erased and the subsequent settings will be preset. Therefore, the FM band stations will be kept for channels 1–20 and the MW (or AM) band stations will be preset to channels 21–30.

- **Manual memory presetting**

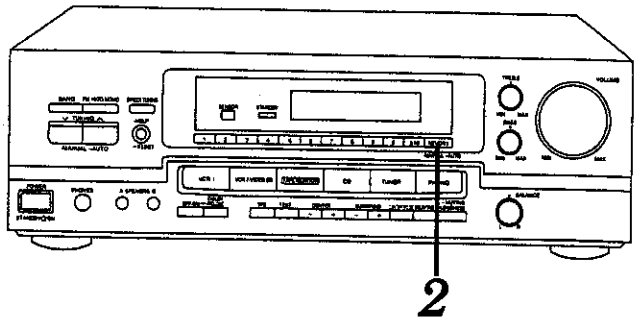
  The desired broadcast stations can be preset into the desired channels by the user.

  This can also be used as a method for changing selected broadcast stations that were preset in "Automatic memory presetting".

Note

If a new broadcast station is preset into a channel, the setting for the broadcast station which was previously entered in that channel will be automatically erased.

Automatic memory presetting

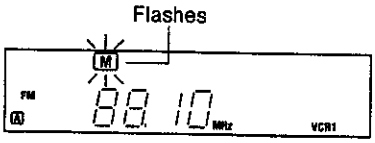


1 **Set to the frequency from which you want to start automatic memory presetting.** (See page 14.)

2 MEMORY **Press MEMORY until the frequency begins to change.**

(Automatic memory presetting will start.)

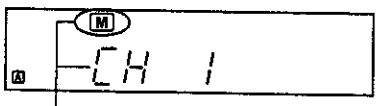
During automatic memory presetting, the memory indicator will flash while the frequency scrolls.



To stop, press MEMORY once again.

When a broadcast station is preset

The memory indicator and the preset channel number will be displayed for approximately 1 second.



Lights up

When presetting is completed

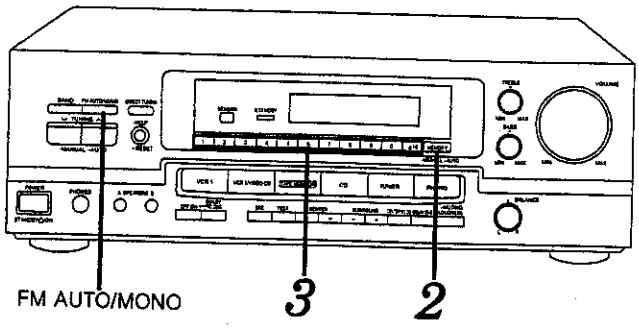
The last broadcast station to be preset will be displayed.

Note

Frequencies may not be preset correctly in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually.

Preset tuning (continued)

Manual memory presetting



1 **Set to the desired broadcast.**
(See page 14.)
If interference or static is keeping you from enjoying an FM broadcast, press FM AUTO/MONO and change to monaurual. You can preset the memory in monaurual just as in stereo.

2 MEMORY **Press MEMORY.** (Touch only.)

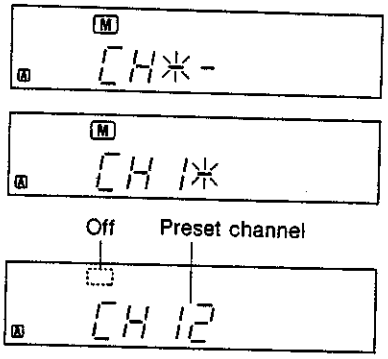
Lights up

To cancel the memory function, press MEMORY again.

3 1 2 3 0 ≥10 **Specify the desired channel to be preset using the numeric button(s) (completes presetting).**

To designate channels 1–9
Press the appropriate (1–9) preset-tuning button.
To designate channels 10–30
(Example: Channel 12)

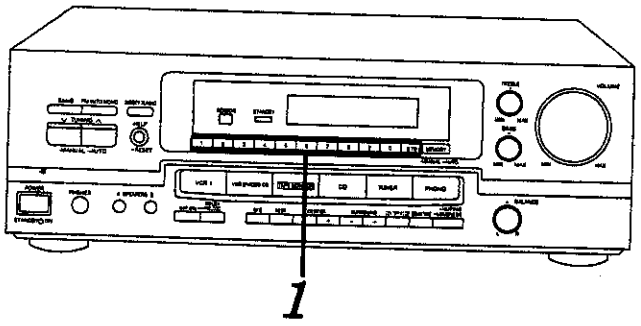
≥10 → 1 → 2
(within 10 sec.) (within 10 sec.)



Once completed step 3, the display reverts back to step 1.

To continue presetting
Repeat steps 1 through 3.

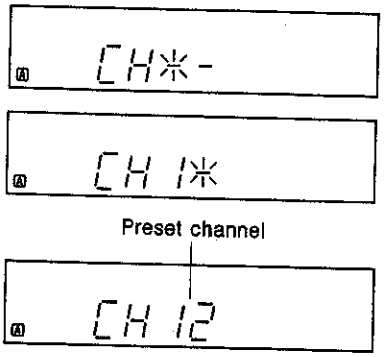
To listen to preset broadcast stations



1 1 2 3 0 ≥10 **Specify the preset channel using the numeric button(s).**

To designate channels 1–9
Press the appropriate (1–9) preset-tuning button.
To designate channels 10–30
(Example: Channel 12)

≥10 → 1 → 2
(within 10 sec.) (within 10 sec.)



After the preset channel is displayed, the frequency of the selected channel is displayed.

To confirm the channel number of the broadcast station being received
Press TUNER.
(The channel number will be displayed for about one second.)

Note
The channel number is not displayed if you change the reception frequency or FM mode setting.

For your reference
Even if the power is switched to standby or the power cord is disconnected from the household AC outlet, the memory will retain its contents for approximately one month.

If frequency presettings are accidentally erased
Make the presettings once again.
The power cord should remain connected for one hour or more for the memory back-up to be effective.

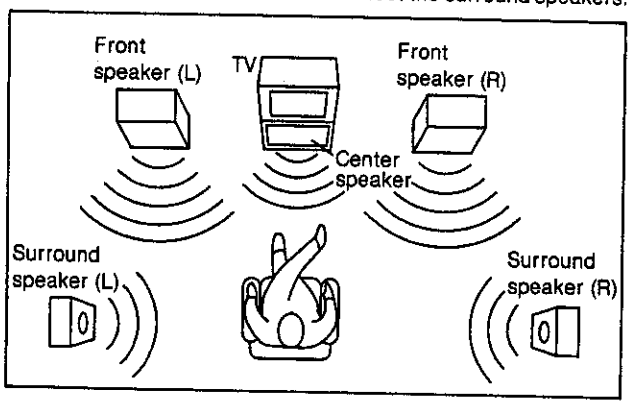
Enjoying sound with DOLBY PRO LOGIC

By combining front, center and surround speakers, you can enjoy the SURROUND mode which conveys a feeling of presence or the 3 STEREO mode which conveys a feeling of orientation.

SURROUND

By reproducing the feeling of depth and movement of sound, video software or compact discs recorded with Dolby Surround provide the listener with a feeling of presence like that of a movie theater.

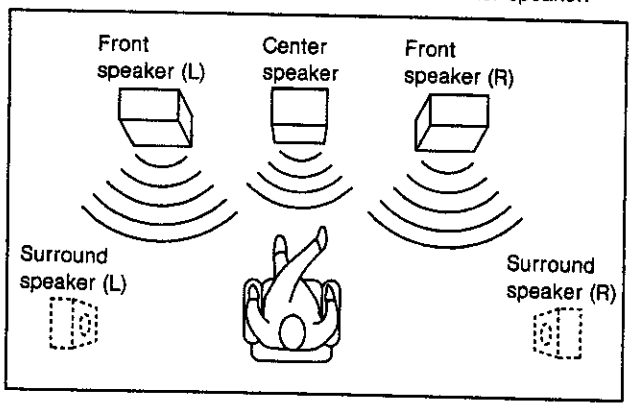
To enjoy SURROUND, be sure to connect the surround speakers.



3 STEREO

You can enjoy audio/visual sources with clear sound, more presence and a good feeling of orientation. 3 STEREO can be used with sources not recorded in DOLBY SURROUND.

To enjoy 3 STEREO, be sure to connect the center speaker.

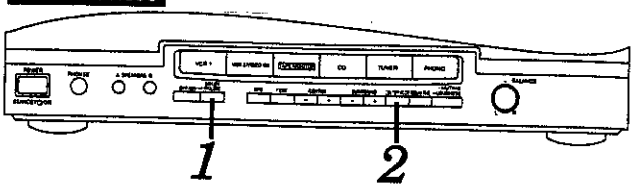


Manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

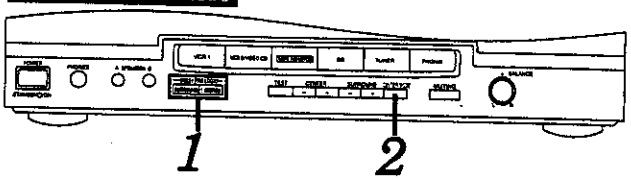
Setting the center mode

For Dolby Pro Logic systems, center mode setting is necessary to play back bass sounds effectively.
Set the center mode in accordance with the size of your center speaker.

For SA-GX690



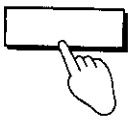
For SA-GX490/GX390



1

For SA-GX690

DOLBY –PRO LOGIC



Press PRO LOGIC to turn on the Dolby Pro Logic systems and select the desired mode.

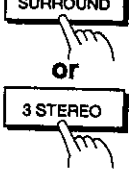
When the button is pressed, the current mode is displayed.
Pressing it again changes the Dolby Pro Logic mode.

For SA-GX490/GX390

SURROUND

or

3 STEREO



Press SURROUND or 3 STEREO to turn on the desired mode.

Pressing the same button again turns off the activated listening mode.

For SURROUND mode

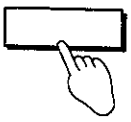
Lights up

For 3 STEREO mode

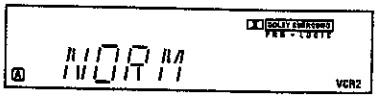
Lights up

2

CENTER MODE



Press CENTER MODE to select the correct center mode.



When the button is pressed, the current center mode is displayed.
Pressing it again changes the center mode.

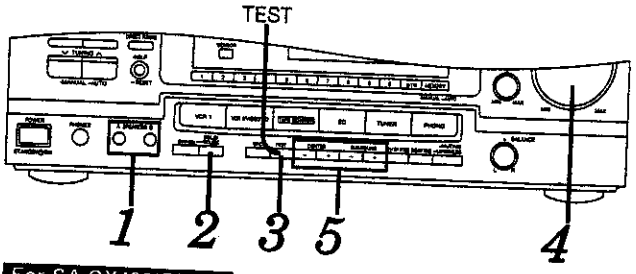
NORM (NORMAL)
When the center speaker is smaller than the front speakers
WIDE (WIDEBAND)
When the center speaker is the same or larger size as the front speakers
PHAN (PHANTOM) SURROUND only
When no center speaker is connected.

Note
In the PHANTOM mode, the sound which would have been sent to the center speaker will be divided equally between both the left and right front speakers.

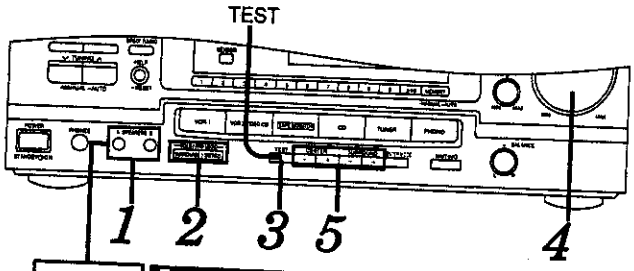
Adjusting speaker output level

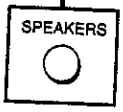
In order to reproduce the movement of the sound and its clear orientation, it is important to adjust the output level of each speaker. Adjust output to the correct levels while listening to the test signal.

For SA-GX690



For SA-GX490/GX390





For SA-GX390

1

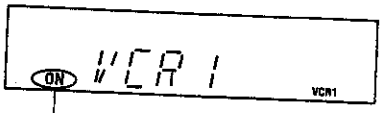
For SA-GX690/GX490

Press A or B to select the speaker system to be used.

SPEAKERS

For SA-GX390

Press SPEAKERS and check the "ON" indication lights up.

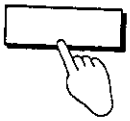


Lights up

2

For SA-GX690

DOLBY –PRO LOGIC



Press PRO LOGIC to turn on the Dolby Pro Logic systems and select the desired mode.

For SA-GX490/GX390

SURROUND

Press SURROUND or 3 STEREO to turn on the desired mode.

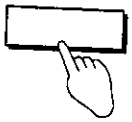
or

3 STEREO

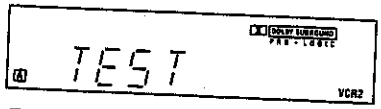
Pressing the same button again turns off the activated listening mode.

3

TEST



Press TEST to output a test signal.



The test signal is emitted in the following order:

For SURROUND mode

Front speaker (left) → Center speaker → Front speaker (right) → Surround speakers (left, right) → Front speaker (left)

Note

The test signal is not emitted from the center speaker when the center mode is on PHANTOM.

For 3 STEREO mode

Front speaker (left) → Center speaker → Front speaker (right) → Front speaker (left)

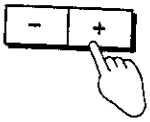
4

VOLUME

Turn VOLUME to set the volume level normally used for enjoying the source.

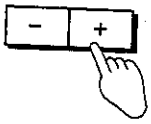
5

CENTER



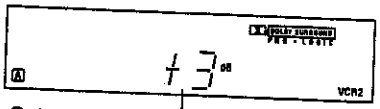
Press CENTER (–) or (+) or SURROUND (–) or (+) to adjust the output level balance.

SURROUND



Adjust the output level of each speaker from the listening position until they are all identical.

–: Decrease the output level.
+: Increase the output level.

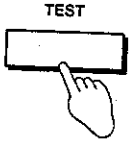


Output level can be varied within a range of –12 dB to +12 dB according to that output from the front speakers.

Note

1. The test signal is output only by the speaker you are now adjusting and does not repeat the sequence until adjustments are complete.
2. Remember you cannot adjust output level of the surround speakers if you selected the 3 stereo mode in step 2.

TEST

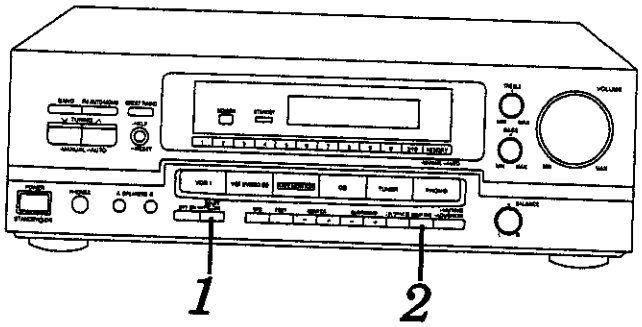


To stop the test signal

Press TEST.

Adjusting the delay time
SA-GX690 only

When enjoying with SURROUND only
Adjust the sound from the surround speakers until the proper effect is produced.

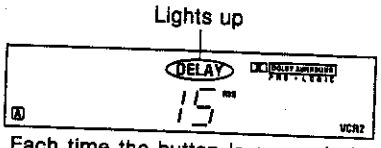


1 DOLBY −PRO LOGIC

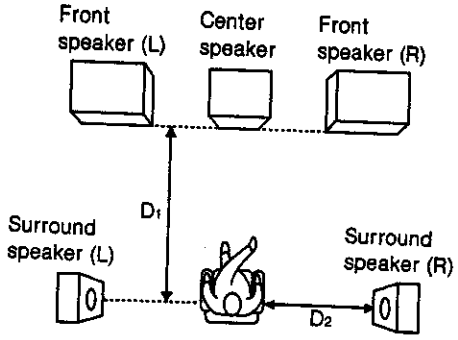
Press PRO LOGIC to turn on the Dolby Pro Logic systems and select the SURROUND mode.

2 DELAY TIME

Press DELAY TIME to set to the suitable time.
When the button is pressed, the current delay time is displayed, pressing it again changes the delay time.



Each time the button is pressed, the delay time will increase by 5 ms.
To calculate the delay time, refer to the calculation methods below.
The standard setting is 20 ms.

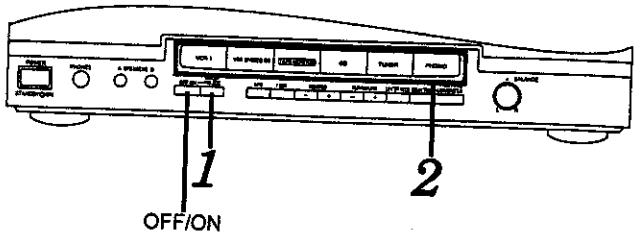


D_1: Distance from front speakers
D_2: Distance from surround speakers

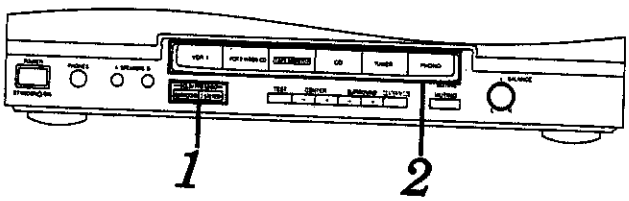
- **If D_1 is equal to or less than D_2**
  Set to 15 ms.
- **If D_2 is less than D_1**
  Start at 15 ms and increase by 5 ms for every 1.5 m of difference between D_1 and D_2.

Enjoying with SURROUND or 3 STEREO

For SA-GX690



For SA-GX490/GX390



Before trying anything, have you set the center mode and adjusted speaker output level (and adjusted the delay time **SA-GX690 only**)?

1

For SA-GX690

DOLBY −PRO LOGIC

Press PRO LOGIC to turn on the Dolby Pro Logic systems and select the desired mode.

For SA-GX490/GX390

SURROUND

Press SURROUND or 3 STEREO to turn on the desired mode.

or

3 STEREO

Pressing the same button again turns off the activated listening mode.

2 **Select the desired source.**

3 **Start the desired source.**

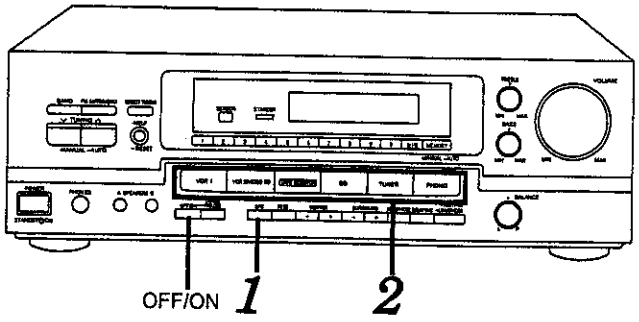
Note
When employing SURROUND, use software recorded in Dolby Surround.

OFF/ON

To turn off the Dolby Pro Logic systems
Press OFF/ON.
Press once again to turn it on.

Enjoying sound with SFC SA-GX690 only

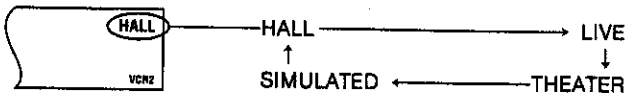
The SFC function gives presence and spread thereby enhancing and enriching the music or movie.



1 SFC

Press SFC to turn on the SFC function and select the desired mode.

When the button is pressed, the current mode is displayed.
Pressing it again changes the SFC mode.



HALL

This mode imparts a reflection and spread which will make you feel as if you are in a large concert hall.

LIVE

Primarily for vocal pieces, this mode adds gloss to the vocals and you'll feel as though you were hearing a live stage performance.

THEATER

You can clearly perceive the directions and source of the movie. Real ambience of sound can also be recreated naturally using this mode.
THEATER mode can be used with stereo sources not encoded with DOLBY SURROUND.

Note

When using Dolby surround encoded source materials, select the DOLBY PRO LOGIC SURROUND.

SIMULATED

Choose this mode if little or no sound will be heard from the surround speakers.
You can feel as if you were in a more expanded space adding to the actual sound from the source.
This mode also adds effect to monaural sources by outputting the sound from surround speakers.

Note

You can adjust center speaker volume only in the theater mode. The center speaker is not used in the hall, and simulated modes.

2 VCR 1 VCR PHONO **Select the desired source.**

3 **Start the desired source.**

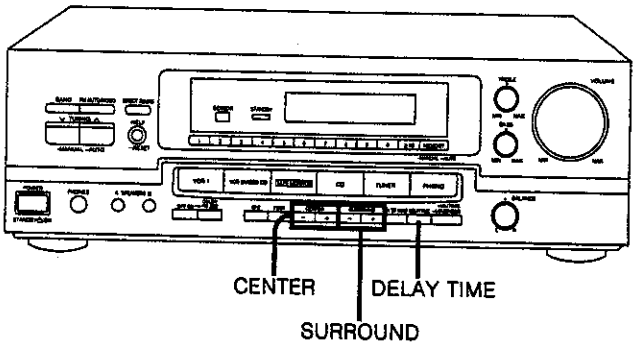
OFF/ON

To turn off the SFC function

Press OFF/ON.
Press once again to turn it on.

Adjusting field of sound

With this unit, you can adjust speaker volume and select delay time. Adjust the field of sound while listening to a source.



To adjust center speaker volume

CENTER − +

In the theater mode only

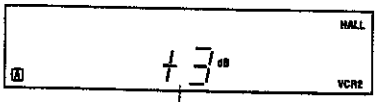
Press CENTER (−) or (+).

To adjust surround speaker volume

SURROUND − +

Press SURROUND (−) or (+).

−: Decrease the output level.
+: Increase the output level.



Output levels can be varied within a range of −12 dB to +12 dB according to that output from the front speakers.

To adjust the delay time

DELAY TIME

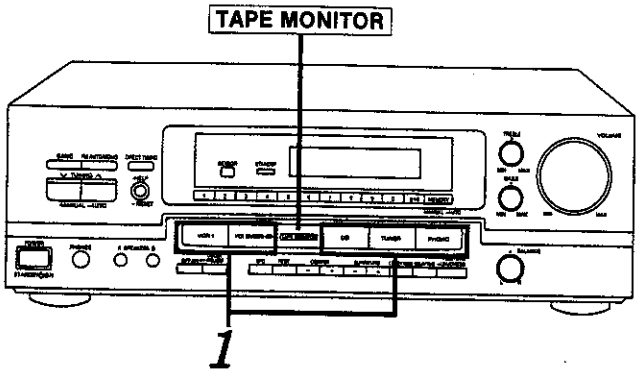
Press DELAY TIME to set to the suitable time.

When the button is pressed, the current delay time is displayed, pressing it again changes the delay time.

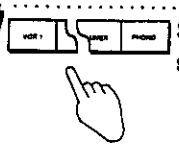
As the time display increases, the feeling of the sound becomes wider.

Recording on the tape deck

Before recording, prepare the tape deck for recording (recording level adjustment, etc.).
See the tape deck's operating instructions for details.



1 **Select the audio/video source to be recorded.**



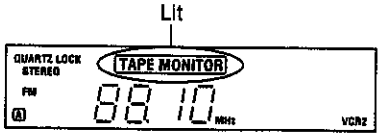
2 **Begin recording.**
Follow your tape deck's operating instructions.

3 **Begin the audio/video source to be recorded.**

To check the sound recorded while a recording is being made

With a tape deck with 3 head system, it is possible to check the sound recorded on the tape.

Press **TAPE MONITOR** on this unit and set the monitor button on the tape deck to "TAPE".

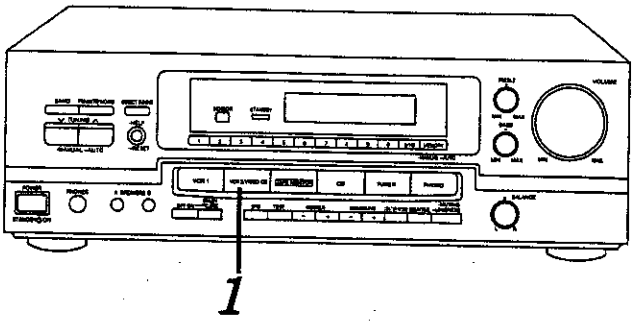


Press **TAPE MONITOR** once again to turn it off.

Recording on the VCR (VCR 1)

Before recording, prepare the VCR (VCR1) for recording (recording level adjustment, input selector setting, etc.).
See the VCR's operating instructions for details.

Recording from VCR 2



1

Press VCR 2/VIDEO CD.

2 **Begin recording on the VCR 1 and playback the tape on the VCR 2.**
Follow your VCR's operating instructions.

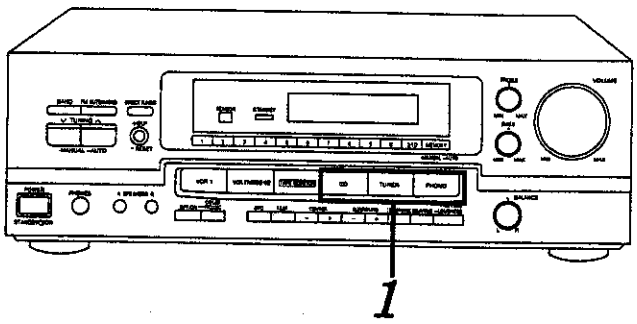
For your reference

If a video CD changer is connected to the "VCR 2/VIDEO CD" terminals, recording from the video CD changer is possible by following the above procedure.

Recording on the VCR (VCR 1)

Recording from an audio source

Note
Recording from the tape deck is not possible.



1 **Select the audio source to be recorded.**

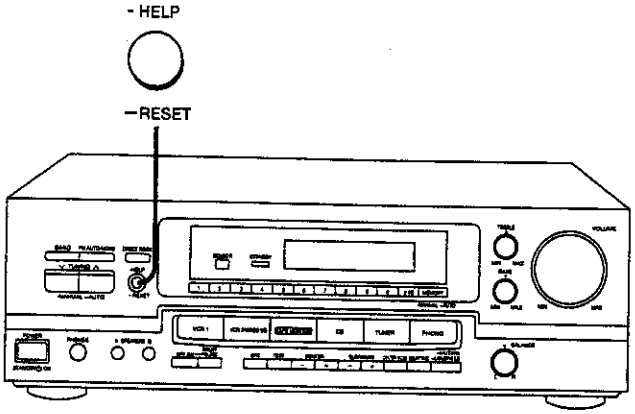
2 **Begin recording on the VCR 1.**
Follow your VCR's operating instructions.

3 **Begin the audio source to be recorded.**

Precautions in recording a audio source

If not recording the picture from VCR2 or a video CD player, either turn the unit OFF or select VCR1.
The unit is set such that video signals input at video input terminals "VCR2" and "VIDEO CD" are output from the "VCR1" video output terminal on the back of the stereo.
Therefore, when recording an audio source, if the VCR2 source or video CD player is playing, the picture will be recorded through VCR1.

If you make a mistake in operation or if sound output stops due to some operation which was performed, the HELP function displays information which can be useful for indicating the method by which this condition can be remedied.
If "ERROR" or scrolling characters (for instance, "TAPE MONITOR ON NOW") appears on the display during operation, carry out the following operation.



Press -HELP. (Touch only.)
The method for remedying this situation will be displayed.

For your reference

If the above button is pressed for 2 second or more until "RESET" appears on the display, the operation settings for the unit will be initialized to the settings made at the time of shipment.
However, any broadcasting stations which have been preset into memory will not be erased at this time.

Troubleshooting guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
While listening to FM broadcasts		
An unusual hissing noise is heard when listening to the broadcast in stereo, but not heard when listening monaurally.	A slight noise may be heard because the method used for modulation of FM stereo broadcasts is different than that used for monaural broadcasts.	• Try reducing the treble sound by using the treble control. • Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna Transmitting station is too far away.	
The FM stereo indicator or the quartz lock indicator flickers, without completely illuminating.	Poor location and/or direction of the antenna Transmitting station is too far away.	• Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
Excessive distortion in the sound of stereo broadcasts.	Nearby building or mountain	
While listening to MW/LW (For Australia and N.Z.: AM) broadcasts		
An unusual "beat" sound is heard.	The unit is being used at the same time as the television set.	• Turn off the television set, or use this unit farther away from it.
	Interference from adjacent broadcast signals	• Try reducing the treble sound by using the treble control.
A low-pitched "hum" sound is heard when the broadcast is tuned.	The AM loop antenna connection wires are too close to the power cord.	• Place the antenna connection wires and the power cord farther apart.
A strange hissing noise is produced continuously or intermittently.	Caused by the "discharge phenomenon" and the "oscillation phenomenon" of electric appliances (such as fluorescent lights, TV, small series-type motors, rectification equipment, etc.).	• Try placing this unit farther away from such equipment.
Problems noted at all times		
Power will not switch ON.	The power cord plug is not completely inserted.	• Confirm that the power cord plug is connected completely.
No sound is heard.	Both A and B speakers are turnd OFF.	• Press the HELP button. (The display will scroll through the causes of the problem.) Use this display as a guide to remedy the problem.
	The tape monitor function is ON.	
	The muting function is ON.	
	Connections are incomplete or incorrect to the speaker systems, etc.	• Check to be sure that all connection wires are correctly connected.
	The incorrect input selector has been pressed.	• Check to be sure that the correct selector is pressed.
Sound stops during a performance, or no sound is heard when the power is switched ON. (The word "OVERLOAD" appears on the display.)	The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted". Speaker systems with an impedance less than the indicated rated impedance of this unit are used or under severe use, such as loud volume, excessive power and in an excessively hot environment.	• Switch off the power, and after determining and correcting the cause, switch ON the power once again. • Use a speaker system of the proper impedance rating.
The word "ERROR" appears on the display.	When the Dolby Pro Logic system is ON, both A and B speakers are turnd ON.	• Press the HELP button. (The display will scroll through the causes of the problem.) Use this display as a guide to remedy the problem.
	When both A and B speakers are being used simultaneously, the Dolby Pro Logic system is turned ON.	

Technical specifications (DIN 45 500)

■ AMPLIFIER SECTION

Power output (at 240 V)
DIN 1 kHz (T.H.D. 1%)
(For United Kingdom)
[SA-GX690] 2 × 100 W (4 Ω)
[SA-GX390] 2 × 50 W (4 Ω)
(For Australia and N.Z.)
[SA-GX690] 2 × 100 W (8 Ω)
[SA-GX490] 2 × 100 W (8 Ω)
[SA-GX390] 2 × 60 W (8 Ω)
20 Hz – 20 kHz continuous power output both channels driven
(For United Kingdom)
[SA-GX690] 2 × 65 W (8 Ω)
(For Australia and N.Z.)
[SA-GX690] 2 × 90 W (8 Ω)
[SA-GX490] 2 × 80 W (8 Ω)
40 Hz – 20 kHz continuous power output both channels driven
(For United Kingdom)
[SA-GX390] 2 × 30 W (8 Ω)
(For Australia and N.Z.)
[SA-GX390] 2 × 40 W (8 Ω)
Total harmonic distortion
rated power at 20 Hz – 20 kHz
[SA-GX690/SA-GX490] 0.05% (8 Ω)
rated power at 40 Hz – 20 kHz
[SA-GX390] 0.5% (8 Ω)
half power at 1 kHz 0.03% (8 Ω)
Power output at the Dolby Pro Logic operation
DIN 1 kHz (T.H.D. 1%)
Front (For United Kingdom)
[SA-GX690] 2 × 60 W (4 Ω)
[SA-GX390] 2 × 40 W (4 Ω)
(For Australia and N.Z.)
[SA-GX690] 2 × 70 W (8 Ω)
[SA-GX490] 2 × 55 W (8 Ω)
[SA-GX390] 2 × 40 W (8 Ω)
Center (For United Kingdom)
[SA-GX690] 60 W (8 Ω)
[SA-GX390] 40 W (8 Ω)
(For Australia and N.Z.)
[SA-GX690] 70 W (8 Ω)
[SA-GX490] 55 W (8 Ω)
[SA-GX390] 40 W (8 Ω)
Surround (For United Kingdom)
[SA-GX690] 60 W (8 Ω)
[SA-GX390] 40 W (8 Ω)
(For Australia and N.Z.)
[SA-GX690] 70 W (8 Ω)
[SA-GX490] 55 W (8 Ω)
[SA-GX390] 40 W (8 Ω)
Intermodulation distortion
rated power at 60 Hz: 7 kHz = 4:1, SMPTE 0.5% (8 Ω)
Power bandwidth
both channels driven, −3 dB
10 Hz – 40 kHz (8 Ω)
Damping factor 30 (8 Ω)
Input sensitivity and impedance
PHONO 3 mV/47 kΩ
CD, VCR 1, VCR 2/VIDEO CD, TAPE
200 mV/22 kΩ
S/N at rated power (8 Ω)
PHONO 70 dB (IHF, A: 80 dB)
CD, VCR 1, VCR 2/VIDEO CD, TAPE
75 dB (IHF, A: 88 dB)
Frequency response
PHONO RIAA standard curve (30 Hz – 15 kHz) ±0.8 dB
CD, VCR 1, VCR 2/VIDEO CD, TAPE
10 Hz – 40 kHz, ±3 dB
Tone controls
BASS 50 Hz, +10 to −10 dB
TREBLE 20 kHz, +10 to −10 dB
Loudness control (volume at −30 dB)
[SA-GX690 only] 50 Hz, +9 dB
Output voltage
VCR 1 OUT, TAPE REC (OUT) 200 mV
Channel balance (250 Hz – 6.3 kHz)
±1 dB
Channel separation 55 dB
Headphones output level and impedance 430 mV/330 Ω
Load impedance
Front
[SA-GX690/SA-GX490]
A or B (For United Kingdom) 4 – 16 Ω
(For Australia and N.Z.)
8 – 16 Ω
A and B 8 – 16 Ω
[SA-GX390]
(For United Kingdom) 4 – 16 Ω
(For Australia and N.Z.) 8 – 16 Ω
Center 8 – 16 Ω
Surround 4 – 16 Ω

■ FM TUNER SECTION

Frequency range 87.50 – 108.00 MHz
Sensitivity
S/N 30 dB 1.5 μV/75 Ω
S/N 26 dB 1.3 μV/75 Ω
S/N 20 dB 1.2 μV/75 Ω
IHF usable sensitivity
(IHF '58) 1.5 μV/75 Ω
IHF 46 dB stereo quieting sensitivity
22 μV/75 Ω
Total harmonic distortion
MONO 0.2%
STEREO 0.3%
S/N
MONO 60 dB (75 dB, IHF)
STEREO 58 dB (71 dB, IHF)
Frequency response
20 Hz – 15 kHz, +1 dB, −2 dB
Alternate channel selectivity
±400 kHz 65 dB
Capture ratio 1 dB
Image rejection at 98 MHz 40 dB
IF rejection at 98 MHz 70 dB
Spurious response rejection at 98 MHz
70 dB
AM suppression 50 dB
Stereo separation
1 kHz 40 dB
Carrier leak
19 kHz −30 dB (−35 dB, IHF)
38 kHz −50 dB (−55 dB, IHF)
Channel balance (250 Hz – 6.3 kHz)
±1.5 dB
Limiting point 1.2 μV
Bandwidth
IF amplifier 180 kHz
FM demodulator 1000 kHz
Antenna terminal(s) 75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range
MW (AM) 522 – 1611 kHz (9 kHz steps)
530 – 1620 kHz (10 kHz steps)
LW (For United Kingdom only)
144 – 288 kHz
Sensitivity
MW (AM) 20 μV, 330 μV/m
LW (For United Kingdom only) 45 μV
Selectivity
MW (AM) (at 999 kHz) 55 dB
LW (For United Kingdom only) (at 252 kHz) 55 dB
Image rejection
MW (AM) (at 999 kHz) 40 dB
LW (For United Kingdom only) (at 252 kHz) 40 dB
IF rejection
MW (AM) (at 999 kHz) 55 dB
LW (For United Kingdom only) (at 252 kHz) 55 dB

■ VIDEO SECTION

Output voltage at 1 V input (unbalanced)
1 ±0.1 Vp-p
Maximum input voltage 1.5 Vp-p
Input/output impedance
75 Ω (unbalanced)

■ GENERAL

Power consumption
(For United Kingdom) [SA-GX690] 235 W
[SA-GX390] 220 W
(For Australia and N.Z.)
[SA-GX690] 225 W
[SA-GX490] 200 W
[SA-GX390] 190 W
Power supply AC 50/60 Hz, 230 – 240 V
Dimensions (W × H × D)
[SA-GX690] 430 × 158 × 352 mm
[SA-GX490/SA-GX390] 430 × 136 × 352 mm
Weight [SA-GX690] 9.8 kg
[SA-GX490] 9.2 kg
[SA-GX390] 7.8 kg

Notes:
1. Specifications are subject to change without notice.
   Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

For United Kingdom only
This apparatus was produced to BS 800.

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